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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/577,730

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EXAMINER

WONG, ALBERT KANG

ART UNIT

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2612

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/577,730	Applicant(s) ICHIKAWA ET AL.	
	Examiner ALBERT K. WONG	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 May 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. This Office action is in response to the application filed May 2, 2006. This application is a 371 of PCT/JP04/16528, filed November 8, 2004 which claims the benefit of applications JP 2003-378416 and 2004-258300, filed November 7, 2003 and September 6, 2004 respectively. Claims 1-18 are pending. It is noted that several of the references cited on the submitted IDSs have either not been supplied or have no translation. Thus, the citations have been lined-through on forms PTO-1449.

2. The amendment filed under Article 34 Amendment PCT is objected because it introduces new matter into the disclosure. No amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The statement, added to the body of the specification and certain claims, that the sensor device are provided with a communication device for communicating with other sensor device is not supported by the specification as filed. The original specification merely teaches the communication between a sensor and a base station.

Applicant is required to cancel the new matter in the reply to this Office Action.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed communication between sensor devices must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing

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should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. Claims 1-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The communication between a sensor and another sensor is not supported by the specification as filed. Further, the specification as amended does not provide any details pertaining to this communication, and thus, this feature is not considered enabled.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-3, 5-6, 8, 11-12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiromoto (2002-211219).

Regarding claim 1, the claimed step of mounting sensor devices within the tire is shown as items 5-7. The step of mounting a base station for communicating with the sensor devices and the car body is shown as items 9 and 10. The transmitter (item 9) takes in data from the sensors and relays them to the receiver (item 10) on the car body. Hiromoto does not teach communications between sensors. The communication between sensors is conventional and typically used to extend the range of communication between sensors and a central reader among other uses. It would have been obvious to incorporate conventional techniques to achieve well known desired functions.

Regarding claim 2, it would have been obvious to limit the communication capability of the sensor devices to only the devices it is intended to communicate with so that stray signals would not inadvertently affect the sensors.

Regarding claim 3, since the communication requirements between the base station and the sensors and between the base station and the car body is different (i.e. range, amount of data,

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number of device to communicate with) it would have been obvious to use different protocols to avoid interference or to optimize the communications.

Regarding claim 5, the sensor devices and base station have been addressed in claim 1. Hiromoto does not explicitly disclose that the base station processes signals from the sensors. Since the signals from the sensors are continuous and there are many sensors, it would have been obvious to process the signals so they may be stored for later transmission.

Regarding claim 6, this limitation has been addressed in a prior claim.

Regarding claim 8, where there is a plurality of sensors and one reader, it would have been obvious to control the transmission of data from each sensor so that the individual transmissions would not interfere with each other.

Regarding claim 11, it would have been obvious to include a storage means so that the data from the sensors may be stored or processed prior to transmission. A base station typically aggregates received sensor data and transmits the data in a single burst to reduce transmission requirements.

Regarding claim 12, it is conventional to process stored data prior to transmission. For example, stored data may be arranged in packets with error correction or labeled with the transmission source. Then the entire data packet is transmitted. It would have been obvious to use a processor to achieve this function.

Regarding claim 16, it would have been obvious to include a sensor module without a sensor so that additional parameters may be added at a later date. Alternatively, the sensor module may be designed so that the sensor may be interchanged with a different sensor.

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8. Claims 4, 7, 9, 10, 13-14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiromoto and further in view of Mackness (6,902,136 note that reference is a divisional of 10/273,659 which was filed October 18, 2002).

Regarding claim 4, Hiromoto does not teach sensor devices that are driven by radio waves from the car body. Mackness teaches a tire pressure monitoring system wherein the sensor derives power from radio waves transmitted via an antenna. It would have been obvious to use the same type of sensor/RFID unit to monitor conditions in Hiromoto to allow easy implementation of a wireless sensor system in a tire. Although the antenna is located on the wheel, it would have been obvious to one of ordinary skill in the art to locate the antenna on the car so that the power supply is unlimited. In fact, Mackness teaches that the antenna on the car body may be used to power the base station.

Regarding claims 7 and 9, see rejection of claim 4.

Regarding claim 10, Hiromoto teaches that the sensor devices have transmitters for transmitting signals to the base station.

Regarding claim 13, see col. 4, lines 30-35 of Mackness.

Regarding claim 14, a sensor with means for storing power has been addressed above. The type of sensor is considered obvious since any type of sensor able to detect a tire parameter is suggested by the Hiromoto reference. Further, since applicant has provided no details regarding the angle sensor, this is considered a well known, conventional part.

Regarding claim 17, the transmitter in Mackness is arranged away from the tire. It would have been obvious to orient the transmitter (antenna) of the sensors away from the tire to better communicate with the base station if it is located in the wheel (as taught in Mackness).

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9. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hiromoto and/or Mackness as applied to claims 6 or 10 above, and further in view of Balzer et al (6,217,683).

Regarding claim 18, H and M do not teach mounting sensor to the tire through a base-isolated device. Balzer teaches in Figure 1 a sensor mounted to a tire via an isolation device. It would have been obvious to include the isolation device to ensure a more accurate signal.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALBERT K. WONG whose telephone number is (571)272-3057. The examiner can normally be reached on M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian A. Zimmerman can be reached on 571-272-3059. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Albert K Wong/
Primary Examiner, Art Unit 2612

December 20, 2008